

REMARKS

Claims 1-23 were pending in this application.

Claims 1-23 have been rejected.

No claims have been amended.

Claim 24 has been added.

Claims 1-24 are now pending in this application.

Reconsideration and full allowance of Claims 1-24 are respectfully requested.

I. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 1-7 and 15-23 under 35 U.S.C. § 103(a) as being unpatentable over Applicant Admitted Prior Art (“*APA*”) in view of U.S. Patent No. 6,396,888 to Notani et al. (“*Notani*”). The Office Action rejects Claims 8-14 under 35 U.S.C. § 103(a) as being unpatentable over *APA* and *Notani* in view of U.S. Patent No. 5,319,679 to Bagby (“*Bagby*”). These rejections are respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP* § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce

evidence of nonobviousness. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (*MPEP* § 2142).

APA recites the use of peak-to-peak limiters, multipliers, and delay lines. (*Application*, *Figure 2*). The Office Action acknowledges that *APA* fails to disclose the use of a "delay locked loop" controlling a "first current controlled delay line," where the "delay locked loop" includes a "second current controlled delay line." (*Office Action*, *Page 2*, *Last paragraph*). The Office Action then asserts that *Notani* discloses these elements and that it would be obvious to modify

APA with *Notani*. (*Office Action, Page 3, First paragraph*). According to the Office Action, the proposed motivation for the modification is that *Notani* would “ensur[e] that all of the delayed signals are in phase.” (*Office Action, Page 3, First paragraph*).

First, this represents an improper motivation to modify *APA* with *Notani*. The whole purpose of *APA* is to process in-phase (I) and quadrature (Q) signals. By definition, in-phase and quadrature signals are out-of-phase with one another. There is absolutely no motivation to modify *APA* so that the signals delayed by the delay line 210A (the in-phase signal) and the delay line 210B (the quadrature signal) are in-phase with each other.

Second, there is no motivation to modify *APA* so that the input to a delay line 210A or 210B of *APA* is in-phase with the output of that delay line. If this actually occurred in *APA*, at least one of the multipliers 215A-215B in *APA* would receive two in-phase inputs (a peak-to-peak limiter output and the delayed version of the peak-to-peak limiter output). If the inputs to a multiplier 215A or 215B are always in-phase with each other, that multiplier would always produce a constant output. This is because each of the multipliers 215A-215B (which may represent XOR gates) produces an output that is proportional to a phase shift between its inputs. If the phase shift is zero, the output would be zero or otherwise remain constant. As a result, *APA* could not be modified so that the input to a delay line 210A or 210B of *APA* is in-phase with the output of that delay line.

Third, *Notani* uses various components in Figure 18 of *Notani* to ensure that a clock signal (CKFP1) is in-phase with the delayed version of itself (DCKFP1). (*Col. 18, Lines 45-51*). When this occurs, each remaining clock signal (CKFPi) then leads the delayed version of itself

(DCKFPi) by a multiple n of the clock period T . (*Col. 18, Lines 51-54*). In other words, the delayed version (DCKFPi) of a clock signal lags that clock signal (CKFPi) by a time of nT . If this functionality was implemented in *APA*, each delay line 210A-210B would constantly delay its input by a time of nT . As a result, the output of each multiplier 215A-215B would be constant since the phase shift of the multiplier's inputs would remain constant. Again, this would render *APA* unsuitable for its intended purpose.

For these reasons, the Office Action fails to establish that a person skilled in the art would be motivated to modify *APA* with *Notani* to reach the Applicants' claimed invention. Accordingly, the Applicants respectfully request withdrawal of the § 103 rejection and full allowance of Claims 1-21.

III. NEW CLAIM

The Applicants have added new Claim 24. The Applicants respectfully submit that no new matter has been added. The Applicants respectfully request entry and full allowance of Claim 24.

IV. CONCLUSION

The Applicants respectfully assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of the claims.

SUMMARY

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Applicants have included the appropriate fee to cover the cost of this AMENDMENT AND RESPONSE. The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Davis Munck Deposit Account No. 50-0208.

Respectfully submitted,

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